

I claim:

1. A multi-modal device for facilitating wireless communication over any one of a plurality of wireless communication networks operating pursuant to differing transmission protocols and/or over differing radio frequencies, comprising

a frequency agile radio transceiver adapted to operate at a radio frequency appropriate for each of the plurality of wireless communication networks as determined by a frequency control signal,

a digital interface circuit for interconnecting said frequency agile radio transceiver with external devices to allow information to be sent and received over said frequency agile radio transceiver,

protocol agile operating circuit means for operating said frequency agile radio transceiver and said digital interface circuit in accordance with one of the transmission protocols as determined by a protocol control signal, and

adaptive control means for accessing a selected wireless communication network and for generating the frequency control signal and the protocol control signal in response to a user defined criteria to cause the device to communicate with the selected wireless communication network using the frequency determined by the frequency control signal and the protocol determined by the protocol control signal.

2. The multi-modal device of claim 1, wherein said adaptive control means selects the wireless communication network based on the least cost.

3. The multi-modal device of claim 1, wherein said adaptive control means selects the wireless communication network based on the quality of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

4. The multi-modal device as defined in claim 1, wherein said adaptive control means selects the wireless communication network based on the probability of being dropped from the network.

5. The multi-modal device as defined in claim 1, wherein said adaptive control means selects the wireless communication network based on the security of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

6. The multi-modal device as defined in claim 1, wherein said adaptive control means selects the wireless communication network based on prior experience with specific wireless communication networks.

7. The multi-modal device as defined in claim 1, wherein said adaptive control means selects the wireless communication network based on the combined determination of two or more of the following:

the cost of using the wireless communication network,  
the quality of the transmission link connecting said frequency agile transceiver and the selected wireless communication network,  
prior experience with specific wireless communication networks,  
the potential for being dropped by the network, and  
the security of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

8. The multi-modal device as defined in claim 1, wherein said adaptive control means is adapted to communicate in accordance with an electronic handshake with selected wireless communication networks to determine on a real time basis the cost for desired services and operating characteristics of the corresponding wireless communication network.

10. The multi-modal device as defined in claim 9, further including  
5 a data processor means for processing digital data sent and/or received over  
said frequency agile transceiver.

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adaptive control means for accessing a selected wireless communication network and for generating the frequency control signal and

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operating a frequency agile radio transceiver at a radio frequency appropriate for each of the plurality of wireless communication networks as determined by a frequency control signal,

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operating said frequency agile radio transceiver and said interconnected device in accordance with one of the transmission protocols as determined by a protocol control signal,

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16. The method as defined in claim 14, wherein said step of selecting the wireless communication network is based on the quality of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

5 17. The method of claim 14 wherein said step of selecting the wireless communication network is based on the potential for being dropped by the network.

10 18. The method of claim 14, wherein said step of selecting the wireless communication network is based on the security of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

19. The method of claim 13, wherein said step of selecting the wireless communication network is based on prior experience with specific wireless communication networks.

15 20. The method of claim 13, wherein said step of selecting the wireless communication network is based on the combined determination of two or more of the following:

the cost of using the wireless communication network,  
the quality of the transmission link connecting said frequency agile  
20 transceiver and the selected wireless communication network,  
prior experience with specific wireless communication networks,  
the potential for being dropped from the network, and  
the security of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

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21. The method of claim 14 further including the step of engaging in an electronic handshake with selected wireless communication networks to determine on a real time basis the cost for desired services and the operating characteristics of the corresponding wireless communication network.

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22. The method of claim 13, further including the step of causing said frequency agile transceiver to control telephone call placement and call answering functions over wireless communication networks having such telephone functions.

23. The device of claim 1 wherein said frequency agile radio transceiver, said digital interface circuit, said protocol agile operating circuit means, and said adaptive control means are mounted together as a unit which may be functionally engaged and disengaged with a variety of different host devices.

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